IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In the Application of	
Rene Langhans	Before The Board Of Patent Appeals And Interferences
on ROTARY CUTTING UNIT	
Serial No.: 08/883,685	Appeal No. 2001-2591
Filed on: June 27, 1997	(Atty. Docket No. 2821-193)

Hartford, Connecticut, May 27, 2003

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Commissioner for Patents
P.O. Box 1450
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Appellant's Reply To Supplemental Examiner's Answer of March 31, 2003

Dear Sirs:

Appellant's Reply to the Supplemental Examiner's Answer is submitted pursuant to 37 CFR § 1.193(b) since the Board remand of April 30, 2002 called for an elaboration of the Examiner's Answer and Examiner has obliged with an elaboration. Appellant should be entitled to reply to be consistent with the procedure set out in 37 CFR § 1.193 for briefing in Appeals.

In response to the Supplemental Examiner's Answer to the Board of Patent Appeals and Interferences, Paper No. 51, dated March 31, 2003, Appellant

respectfully submits the following remarks.

Prior Proceedings

The Board remanded the application to the Examiner on April 30, 2002 for immediate action in accordance with its "special" status pursuant to MPEP § 708.01(d).[1] The Examiner responded initially in untitled Paper No. 49 dated August 8, 2002. On August 21, 2002, Appellant filed Appellant's Response To Examiner's Reply To The Board. What happened after August 21, 2002 is not known to Appellant. However, beginning in November 2002, Appellant made numerous inquires to the Examiner and subsequently his supervisor, as to the status of the case, and why the application had not been returned to the Board. Finally, Examiner filed a Supplemental Examiner's Answer dated March 31, 2003, eleven months after the Board's remand.

Since Appellant has already responded to the Examiner's Reply filed August 8, 2002 (Paper No. 49), Appellant limits its comments in this brief to the issues raised by the Examiner in the new paragraphs of the Supplemental Examiner's Answer filed March 31, 2003 (Paper No. 51).

I. Section 112 Rejection of Cutting Gap Establishing and Adjusting Means

Regarding the Examiner's rejections under 35 U.S.C. § 112, first paragraph, with respect to the claimed "means for establishing and adjusting a cutting gap between said two circular blades", the Examiner maintains that the specification and drawings do not provide a disclosure sufficient to enable one skilled in the art to make and use the invention. Further, the Examiner asserts that the prior art does not provide a "guide" as to how the described "means" works.[2] Appellant

[1] See, Paper No. 48, Remand To The Examiner, p. 5, ll. 6 - 7, (April 30, 2002).
[2] See, Paper No. 51, Supplemental Examiner's Answer, p. 13, ll. 3 - 7, (March 31, 2003).

respectfully submits that the any person skilled in the art at the time the invention was made in reviewing pages 5 and 7 of the specification and Fig. 4 would be able to reasonably determine how the cutting gap is adjusted and established without undue experimentation. Moreover, the Examiner's determination as to the lack of a "guide" in the prior art that teaches the described invention supports the patentability of the claimed invention.

Further, the Examiner's assertion that the claimed "means for establishing and adjusting a cutting gap" sets forth a positive means and that the Appellant's Brief suggests a passive means is not accurate.[3] Appellant has positively claimed "means for establishing and adjusting a cutting gap" and submits that the claimed "means" includes the upper blade-shaft bearing 11 mounted in the displaceable bush 13, the stationary slotted nut 23, and the screws 24 as described in the specification and drawings.[4] The reference to the word "allows" in Appellant's brief referred to the slot allowing the movement of the pin wrench, not adjustment of the cutting gap.

Regarding the Examiner's assertion that the Appellant's best mode is not clear, Appellant submits that the embodiment of the cutting unit for cutting flat material as fully described in the application and shown in Figs. 1 - 4 and 6 thereof, fully discloses the best mode contemplated by the inventor for carrying out his invention. The Examiner has not set forth any evidence as to the contrary.

As to the operation of the pin wrench 25 and the documentary evidence submitted with respect thereto, Appellant submits that the evidence was submitted in an attempt to clarify the operation of a pin wrench for effecting the rotation of a rotatable member to the Examiner. Regardless of whether the

[3] See Paper No. 51, Supplemental Examiner's Answer, p. 14, ll. 1 - 4, (March 31, 2003).
[4] See, Spec., p. 5, ll. 18 -19, p. 7, ll. 11 -15.

rotatable member is a valve or a threaded bush, the rotation of a pin wrench to produce axial movement of a threaded member is well known in the mechanical arts. The Examiner's assertion that if the operation of the pin wrench is obvious, then the claimed "means" would be obvious and unpatentable,[5] is irrelevant since Appellant seeks a patent on the invention defined in the claims, not an individual element of a claim.

II. Section 112 Rejection of Comparison of Prior Art and Invention

Regarding the comparison between the prior art and the Appellant's invention described on specification pages 7 and 8 and shown in Figures 5 and 6, Appellant submits that the Examiner has not reviewed the chart on page 8 of the application in the context of the specification, from the viewpoint of one skilled in the art. A careful reading of the specification includes a description of the prior art, the difference between the invention and the prior art, and the advantages of the invention over the prior art. The chart provides a summary of advantages that can be achieved by using the circular cutter unit of the invention compared to the state of the art at the time the invention was made.

The following excerpts of the specification clearly distinguish the invention from the prior art and correspond to the comparison contained in the chart.

> "The two above-mentioned apparatuses of the state of the art share the design of mounting the circular blades on two mutually parallel and long shafts,..."[6].

> "Another drawback of equipment of the state of the art is the large size of the cutting-disk shafts which is required. In order to deliver the high pressure necessary for cutting sheet metal and because of the consequent danger of bending, especially at the center of the shaft, such a shaft must have a substantial diameter. Typically, shafts 105 mm in diameter are required to cut sheet metal.

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[5] See, Paper No. 51, Supplemental Examiner's Answer, p. 15, ll. 5 - 7, (March 31, 2003).
[6] See, Spec., p. 1, ll. 22 - 24.

.... Because the shaft diameters are large, the blade diameters also must be large, and as a result the blades evince an unfavorable, fairly shallow angle of cutting and hence guarantee untidy edges."[7]

"The advantages achieved by the invention essentially are the following: .... constant, burr-free cut-edge quality thanks to the constant cutting gap, the constant overlap being reduced by 50% and the strongly reduced shearing surface. The pressure between the two cooperating circular blades is borne by the frame enclosing them alone (rather than by long, bending shafts as in the state of the art), so the shaft diameter may be kept comparatively small. The consequently reduced blade diameter provides a steeper cutting angle resulting in lower forces and hence in a neater cut edge."[8]

"The comparison in percent clearly shows the reductions regarding overlap, shearing surface and cutting time as well as the enlargement of the cutting angle to a range of ... which can be achieved using the circular cutting unit of the invention."[9]

Appellant submits that a careful reading of the specification clearly sets forth to a person skilled in the art a circular cutting unit that can be used for cutting sheet metal. The present invention cutter unit has a frame design that bears the pressure between the cooperating circular blades thereby allowing the use of comparatively smaller shaft diameters than prior art cutters, which results in allowing the use of blades having reduced blade diameters as well as the other advantages identified in the comparison chart. The chart, when reviewed in the context of the specification, clearly indicates that the blade diameter 61 of the invention can be reduced to approximately 41% of the diameter of circular blades used in prior cutters and cut sheet metal .25 mm thickness in 60% of the cutting time of prior art machines and at a sharper cutting angle. Presumably, one skilled in the art of cutters used for cutting sheet metal would have knowledge of the diameter of cutting blades used with shaft sizes of 105 mm in prior art cutter units. Additionally, the specification clearly states the preferred diameter of the blade

[7] See, Spec., p. 2, ll. 12 - 22.
[8] See, Spec., p. 4, ll. 12 - 21.
[9] See, Spec., p. 8, ll. 10 -15.

shafts 1 and 3 to be "a diameter of less than 25 mm and preferably less than 20 mm or about 15 mm suffices for the blade shafts themselves."[10] Accordingly, the Examiner's suggestion that the chart "merely shows the inherent results of a cutting unit that is smaller in size than a hypothetical prior art device"[11], is simply not accurate. The Appellant's specification as originally filed clearly provides an enabling disclosure sufficient for one skilled in the art to make and use the cutter of the present invention and outlines the advantages the invention provides over the prior art.

Additionally, the Examiner's suggestion that the comparison of the invention with the prior art set forth in the application as originally filed is hearsay and of no probative value is incorrect. The Applicant signed an inventor's oath pursuant to 37 CFR §§ 1.63 -1.69 wherein the Applicant swore to the veracity of the contents of the Application. No other affidavit is deemed necessary.

III. A. Section 102 Rejection Based on Suzuki U-shaped Frame

The Examiner's explanation of how the apparatus disclosed by the Suzuki et al. reference (U.S. Pat. No. 4,116,098) meets the specific limitations of claims 1 and 18 relating to the U-shape frame is not credible and does not support the rejections under 35 U.S.C. § 102(b) of claims 1 - 3, 5 - 8, and 10 - 21.

Anticipation requires the presence in a single prior art reference disclosure of each and every element of the claim invention, arranged as in the claim.

Lindemann Maschinenfabrik GMBH v. American Hoist and Derrick Co., 221 USPQ 481, 485 (Fed. Cir. 1984).

[10] See Spec., p. 5, ll. 30 - 31.
[11] See, Paper No. 51, Supplemental Examiner's Answer, p. 18, ll. 2 - 3, (March 31, 2003).

Claim 1 recites in relevant part:

"a frame having substantially a U-shape when viewed in a direction perpendicular to the plane of the flat material with upper and lower legs interconnected by a flat yoke intersecting said plane of the flat material at an acute angle,

means for rotatably supporting said upper and lower blade shafts respectively in said upper and lower legs;"[12]

With respect to the Examiner's first interpretation of the Suzuki frame wherein the U-shape is defined by the upper leg 25B and the flat yoke 39B, this interpretation does not meet the requirements of claim 1. The U-shaped frame is defined as including upper and lower legs and the interconnecting yoke. Claim 1 also includes "means for rotatably supporting said upper and lower blade shafts respectively in said upper and lower legs". So the U-shape has to include both legs 25C and 27, not just leg 25B and yoke 39B as defined by the Examiner, and legs 25B and 27 are not part of a U-shape when viewed perpendicular to the plane of the sheet material. Thus, the limitations of claim 1 are not met by Suzuki if interpreted with the yoke 39B as one of the legs of the U-shape.

Regarding the Examiner's alternate interpretation of the Suzuki reference, the Examiner's statement that "the plane of the flat material could be defined by the side plane of the flat material since flat material inherently includes different planes and since claim 1 does not explicitly limit this plane as being on the horizontal" is not accurate. Claim 1 specifically defines the plane of the flat material as follows: "A circular cutter unit for cutting lengths of flat material comprising: upper and lower circular blades lying in planes substantially perpendicular to a plane defined by the flat material and parallel with the longitudinal direction of the flat material;...".[13] Thus, the plane of the flat material

[12] See, Appellant Brief, Appendix A, Claim 1, ll. 12 -17.
[13] See, Appellant Brief, Appendix A, Claim 1, ll. 1 - 5 (emphasis added).

is defined explicitly in claim 1 as being substantially perpendicular to the planes of the circular blades. Clearly, the side plane of the flat material identified by the Examiner (the edge of the material) is parallel to the planes of the circular blades, thus, the flat plane of the material identified in claim 1 cannot be construed as the side plane of the flat material.

Furthermore, the written description clearly identifies the flat plane of the material as follows: "Briefly described, the invention comprises a circular cutter unit for equipment for cutting flat lengths of material, especially sheet metal, lying in a horizontal plane and having a longitudinal direction."[14] The horizontal plane is shown in Fig. 1 and identified by the reference number 10. The horizontal plane of the material is further described in the specification with respect to Figs. 1 - 4 as follows: "The circular cutter unit of the invention shown in Figs. 1 through 4 essentially comprises an upper circular blade 2 and a lower circular blade 4, both operating perpendicularly to the horizontal plane 10 and in the longitudinal direction 8, that is, in the plane and the direction of the flat length of material being introduced, for instance sheet metal for manufacturing cans."[15]

Regarding claim 18, the Examiner has asserted that the claim language "... when viewed from above the horizontal plane..." is not limited to being strictly perpendicular to the horizontal plane. Thus, the "view" could be at an angle as long as it is viewed from above the horizontal plane.

The Examiner's interpretation of claim 18 is not accurate. First, the Examiner has characterized only the words "when viewed from above the horizontal plane". These words in the context of the language of claim 18, " a frame having substantially a U-shape when viewed from above the horizontal

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[14] See, Spec., p. 2, ll. 30 - 33.
[15] See, Spec., p. 5, ll. 5 - 11.

plane" are definite when considered in the ordinary and customary meaning of the terms and do not include the angular views as suggested by the Examiner. In the absence of an express intent to impart a novel meaning to claim terms, an inventor's claim terms take on their ordinary meaning.[16] The words used in the claims are interpreted in light of the intrinsic evidence of record, including the written description, the drawings, and the prosecution history.[17]

Here the phrase "a frame having substantially a U-shape when viewed from above the horizontal plane", when the terms are considered in their ordinary meaning, should be interpreted such that the frame has a U-shape wherein the "U" lies parallel to the horizontal plane perpendicular to the viewer. In the normal context of terms defining a shape when viewed from a particular viewpoint, the viewpoint is perpendicular to the shape. For example, the phrase "the part has a C-shaped cross-section" has the plain meaning that the part has a cross-section such that when viewed from a point perpendicular to the cross-section, the cross-section is in the shape of a "C". Further, the written description and drawings do not provide anything that would suggest the inventor's intent to impart a novel meaning to the claim terms.

Accordingly, when interpreting claim 18, the term "above" can only be construed to mean directly over or perpendicular to the horizontal plane when interpreted using its normal meaning in light of the claim language, the written description and the drawings. Thus, the Examiner's interpretation of the terms "when viewed from above the horizontal plane" are not accurate in view of the plain language of the claims and the intrinsic record of the application.

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[16] See Teleflex, Inc. v. Ficosa North America Corp., 63 USPQ2d 1380, quoting York Prods. 99 F.3d at 152, 40 USPQ2d at 1622, (Fed Cir. 2002).

III. B. Section 102 Rejection Based on Suzuki Non-positive or Frictional Drive

Regarding the non-positive or frictional drive connection between the upper and lower circular blades as recited in claim 1, Appellant submits the following remarks. Claim 1 recites "a non-positive connection between said circular blades including a transport ring mounted for rotation with the blade on one of the blade shafts and in driving relationship with the blade on the other of the blade shafts;". Appellant's claim 1 clearly recites an arrangement wherein one of the blade shafts includes a transport ring *in driving relationship* with the blade on the other of the blade shafts. Thus, the transport ring on one shaft *drives* the blade on the other shaft. Suzuki et al. does not disclose this feature, and, to the contrary, employs independent drives for the upper and lower blades.

In the gang slitting machine disclosed by Suzuki, "[t]he upper and lower driving shafts 21 and 23 for driving the upper and lower shearing tools 17 and 19, respectively, are driven by a motor 229...".[18] Thus, each of the shearing tools 17 and 19 in the Suzuki apparatus is positively and independently driven by the motor 229 via the shafts 21 and 23 respectively. Therefore, neither of the shearing tools 17 and 19 of the Suzuki cutter are driven by a transport ring as recited in claim 1.

Furthermore, the Examiner's statements with respect to Suzuki misrepresent the Suzuki gang slitting machine and are not supported by the disclosure. The Examiner's statements with respect to the Suzuki apparatus include: "Both the blades and the respective transport rings are in frictional engagement with each other along the circumference thereof. Therefore, all the blades and the rings form a 'non-positive or frictional drive connection' when the

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[17] See Teleflex, Inc. v. Ficosa North America Corp., 63 USPQ2d 1380, quoting Interactive Gift Express, Inc. v. Compuserve, Inc., 256 F.3d 1323, 1331, 59 USPQ2d 1401, 1407, (Fed Cir. 2002).
[18] See Suzuki et al., c. 12, ll. 4 - 6.

shafts are rotated."[19] As mentioned above, each of the shearing tools 17 and 19 in the Suzuki apparatus is positively driven by the shafts 21 and 23 respectively. The disk-like roll member 143 of Suzuki identified by the Examiner is disclosed only to be "arranged as to vertically align with the lower shearing tool 19."[20] No where in the written description of Suzuki are the disk-like roll members 143 and 175 described as being in frictional engagement with the shearing tools 19 and 17 respectively as stated by the Examiner.

Furthermore, as both of the shearing tools 17 and 19 are positively driven by the shafts 21 and 23, then, even if the roll members 143 and 175 were engaged with the shearing tools as the Examiner has asserted, both of the roll members would be driven members as opposed to the arrangement in the present invention wherein one of the transport rings is a driving member as recited in Appellant's claim 1. Therefore, the Examiner's rejection under 35 U.S.C. 102(b) as to the non-positive drive arrangement recited in Appellant's claims 1 and 18 is improper and incorrectly construes the Suzuki reference.

For at least the above-identified reasons, the Examiner has not reasonably substantiated his position that the Suzuki et al. reference discloses each and every element of the Appellant's claimed invention, defined as in the claims. Accordingly the rejections of claims 1-3, 5-8, 10-12 and 14 -21 under 35 U.S.C. §102(b) should be reversed.

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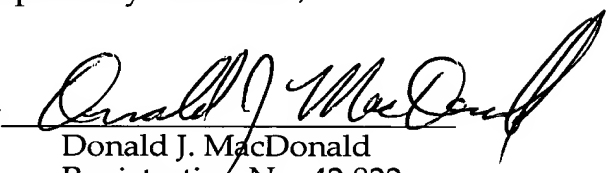
[19] See, Paper No. 51, Supplemental Examiner's Answer, p. 29, ll. 14 - 17, (March 31, 2003).
[20] See Suzuki et al., c. 9, ll. 16 - 18.

In view of the foregoing, it is Appellant's position that claims 1 - 3, 5 - 8, 10 - 12 and 14 -21 as shown in Appendix A of the Appeal Brief are properly supported and in compliance with Section 112 and patentably distinguishable over Suzuki. Accordingly, Appellant respectfully requests that the Board reverse the Examiner's objections, reverse the §112, paragraph one and two rejections, and reverse the §102 rejection over the cited reference.

Respectfully submitted,

By 
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